Complete Summary

GUIDELINE TITLE

Osteomyelitis.

BIBLIOGRAPHIC SOURCE(S)

Osteomyelitis. Philadelphia (PA): Intracorp; 2005. Various p. [11 references]

GUIDELINE STATUS

This is the current release of the guideline.

All Intracorp guidelines are reviewed annually and updated as necessary, but no less frequently than every 2 years. This guideline is effective from July 1, 2005 to July 1, 2007.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Osteomyelitis, including acute, subacute, and chronic osteomyelitis

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Infectious Diseases
Internal Medicine
Orthopedic Surgery
Pediatrics
Surgery

INTENDED USERS

Allied Health Personnel
Health Care Providers
Health Plans
Hospitals
Managed Care Organizations
Utilization Management

GUIDELINE OBJECTIVE(S)

To present recommendations for the diagnosis, management, and treatment of osteomyelitis that will assist medical management leaders to make appropriate benefit coverage determinations

TARGET POPULATION

Individuals with osteomyelitis

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Physical examination and assessment of signs and symptoms
2. Diagnostic tests
    - Laboratory studies, including white blood cell count (WBC), erythrocyte sedimentation rate (ESR), blood cultures
    - X-rays
    - Scintigraphy
    - C-reactive protein (CRP)

Management/Treatment

1. Open or closed drainage of the lesions with debridement of necrotic bone and/or removal of prosthetic materials
2. Oral and/or intravenous antibiotics
3. Hyperbaric oxygen treatment (discussed but not specifically recommended)
4. Follow-up, including
    - Tracking laboratory tests over time (e.g., WBCs and ESRs)
    - Serial radiographs
    - Redebridement and prolonged intravenous antimicrobial therapy in cases of treatment failure
5. Referral to specialists
6. Physical therapy if indicated

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Searches were performed of the following resources: reviews by independent medical technology assessment vendors (such as the Cochrane Library, HAYES); PubMed; MD Consult; the Centers for Disease Control and Prevention (CDC); the U.S. Food and Drug Administration (FDA); professional society position statements and recommended guidelines; peer reviewed medical and technology publications and journals; medical journals by specialty; National Library of Medicine; Agency for Healthcare Research and Quality; Centers for Medicare and Medicaid Services; and Federal and State Jurisdictional mandates.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Not Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not stated

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

A draft Clinical Resource Tool (CRT or guideline) is prepared by a primary researcher and presented to the Medical Technology Assessment Committee or the Intracorp Guideline Quality Committee, dependent upon guideline product type.

The Medical Technology Assessment Committee is the governing body for the assessment of emerging and evolving technology. This Committee is comprised of a Medical Technology Assessment Medical Director, the Benefit and Coverage Medical Director, CIGNA Pharmacy, physicians from across the enterprise, the Clinical Resource Unit staff, Legal Department, Operations, and Quality. The Intracorp Guideline Quality Committee is similarly staffed by Senior and Associate Disability Medical Directors.

Revisions are suggested and considered. A vote is taken for acceptance or denial of the CRT.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Diagnostic Confirmation

Subjective Findings

- Malaise
- Chills
- Decreased joint range of motion (ROM)
- Localized pain, tenderness, or swelling in involved bone

Objective Findings

- High fever
- Swelling of the involved limb
- Rapid pulse
- Skin erythema
- Increased heat of area

Diagnostic Tests

- Lab studies:
    - White blood cell count (WBC) - may be elevated indicating infection or need for further diagnostic testing
    - Elevated erythrocyte sedimentation rate (ESR)
    - Positive (+) blood cultures
- Conventional radiographs:
    - Early on may only show soft tissue swelling
    - At two weeks, areas of bone necrosis and new bone formation may be evident.
- Plain radiographs
- Scintigraphy
- C-reactive protein (CRP)

Differential Diagnosis

- Cellulitis
- Trauma
- Bursitis
- Arthritis
- Primary or metastatic tumors involving bone
- Chronic low back pain (see the Intracorp guideline Chronic Pain)
- Disc disease (see the Intracorp guideline Low Back Pain with Radiculopathy)

Treatment

Treatment Options

- Open or closed drainage of the lesions with debridement of necrotic bone and/or removal of prosthetic materials serving as a focus of infection, and an appropriate antibiotic regimen
- Intravenous therapy of 4 to 6 weeks duration
- Oral treatment with antibiotics (e.g., fluoroquinolones and clindamycin), depending on the bacteria isolated
- Hyperbaric oxygen (HBO) currently remains unproven in the treatment of chronic osteomyelitis
- Follow-up:
    - Adequate outpatient care should involve the tracking of simple laboratory tests over time, (e.g., WBCs and ESRs).
    - Serial radiographs may be useful at less frequent intervals, though the exact role of such studies remains unclear.
    - In cases of treatment failure, redebridement and prolonged intravenous antimicrobial therapy are often necessary.

Duration of Medical Treatment

- Complex - Optimal: 28 day(s), Maximal: 365 day(s)
    - Severe osteomyelitis may require lifelong treatment

Additional information regarding primary care visit schedules, referral options, specialty care, physical therapy, and durable medical equipment is provided in the original guideline document.

The original guideline document also provides a list of red flags that may affect disability duration, and return to work goals, including

- Resolving pain, fever with intravenous antibiotics
- After open or closed surgical drainage
- After chronic osteomyelitis identified

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate diagnosis, management, and treatment of osteomyelitis that will assist medical management leaders to make appropriate benefit coverage determinations

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Osteomyelitis. Philadelphia (PA): Intracorp; 2005. Various p. [11 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2005

GUIDELINE DEVELOPER(S)

Intracorp - Public For Profit Organization

SOURCE(S) OF FUNDING

Intracorp

GUIDELINE COMMITTEE

CIGNA Clinical Resources Unit (CRU)
Intracorp Disability Clinical Advisory Team (DCAT)
Medical Technology Assessment Committee (MTAC)
Intracorp Guideline Quality Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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Reprints of complete guideline content may be purchased for $35.00 per title (plus tax in TX at 8.25% and CT at 1.0%). Please send e-mail request to lbowman@mail.intracorp.com.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Policies and procedures. Medical Technology Assessment Committee Review Process. Philadelphia (PA): Intracorp; 2004. 4 p.
- Online guideline user trial. Register for Claims Toolbox access at www.intracorp.com.

Licensing information and pricing: Available from Intracorp, 1601 Chestnut Street, TL-09C, Philadelphia, PA 19192; e-mail: lbowman@mail.intracorp.com.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on September 15, 2005. The information was verified by the guideline developer on September 30, 2005.

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Date Modified: 9/25/2006